

### Abstract

A method of manufacturing a printed circuit board through-hole connection includes forming a through-hole by removing material from the first side of the printed circuit board until the backing and then slightly into the first side of the backing providing a hole. Next, plating through the hole connecting the backing layer, ground layer, and signal layer. Now the plating of the signal layer is removed without removing the connection from the ground layer to the backing. Finally, the hole is filled from the first side of the printed circuit board.

A method of manufacturing a MMIC printed circuit board through-hole connection includes forming a through-hole by removing material from the first side of the MMIC printed circuit board through the first signal layer, through the MMIC until the second signal layer, and then slightly into the top side of the second signal layer. Once the material is removed, an electrical connection is provided to the first signal layer, the MMIC and the second signal layer.

A printed circuit board through-hole connection that includes an assembled layout of a printed circuit board and formed through holes by material removed from the first side of the printed circuit board up to the backing and then slightly into the top portion of the backing. It further includes plated through-holes that connect the backing, a ground layer and a signal layer, removed plating from the signal layer without the connection removed from the ground layer to the backing and filled through-holes from the first side with a non conductive filler.